

What is claimed is:

1. A method of fracturing a subterranean formation comprising the steps of:
introducing a first treating fluid into the formation at or near a zone of interest within the formation, to create or enhance at least one fracture therein, the first treating fluid being a gelled and crosslinked treating fluid comprising water, a substantially fully hydrated depolymerized polymer and a crosslinking agent for crosslinking the substantially hydrated depolymerized polymer;
introducing a second treating fluid into the formation such that a length of at least one fracture therein is extended, the second treating fluid having a lower viscosity than the first treating fluid; and
introducing a third treating fluid into the formation, the third treating fluid being a gelled and crosslinked treating fluid comprising water, a substantially fully hydrated depolymerized polymer and a crosslinking agent for crosslinking the substantially hydrated depolymerized polymer and further comprising a proppant material.
2. The method of claim 1 wherein the subterranean formation comprises a well bore, and wherein the step of introducing a first treating fluid into the formation at or near a zone of interest comprises the step of swabbing the well bore dry before introducing the first treating fluid into the zone of interest.
3. The method of claim 1 wherein the subterranean formation comprises a well bore and tubing, and wherein the step of introducing a first treating fluid into the formation at or near a zone of interest comprises the step of circulating the first treating fluid through the tubing until the first treating fluid reaches a depth at or near the zone of interest.
4. The method of claim 3 wherein the well bore comprises a well fluid, and wherein the step of circulating the first treating fluid through the tubing until the first treating fluid reaches a depth at or near the zone of interest substantially displaces a portion of the well fluid out of the well bore.
5. The method of claim 1 wherein the subterranean formation comprises a set of perforations, and wherein the step of introducing a first treating fluid into the formation at or near a zone of interest comprises placing the first treating fluid at about or near the perforations in the subterranean formation.

6. The method of claim 1 wherein the step of introducing a third treating fluid into the formation enhances the conductivity of a fracture within the formation.
7. The method of claim 1 wherein the first treating fluid further comprises a proppant.
8. The method of claim 7 wherein the proppant comprises resin-coated or uncoated sand, sintered bauxite, ceramic materials, glass beads or a mixture thereof.
9. The method of claim 7 wherein the proppant comprises 100 mesh sand.
10. The method of claim 1 wherein the formation comprises natural fractures, and wherein the dilation of the natural fractures is minimized until after one dominant fracture has been established within the subterranean formation.
11. The method of claim 1 wherein the second treating fluid comprises water.
12. The method of claim 11 wherein the second treating fluid further comprises a proppant material, a friction reducer, nitrogen, or a mixture thereof.
13. The method of claim 1 wherein the proppant material comprises resin-coated or uncoated sand, sintered bauxite, ceramic materials, glass beads or a mixture thereof.
14. The method of claim 1 wherein the subterranean formation comprises shale, coal or a mixture thereof.
15. The method of claim 1 wherein the substantially fully hydrated depolymerized polymer is a depolymerized guar derivative polymer selected from the group consisting of hydroxypropylguar, carboxymethylhydroxypropylguar, carboxymethylguar, hydroxyethyl cellulose, grafted hydroxyethyl cellulose, carboxymethyl cellulose and carboxymethylhydroxyethyl cellulose.
16. The method of claim 1 wherein the substantially fully hydrated depolymerized polymer comprises depolymerized hydroxypropylguar.
17. The method of claim 1 wherein the substantially fully hydrated depolymerized polymer is present in the first treating fluid in an amount in the range of from about 0.2% to about 5% by weight of the water therein.
18. The method of claim 1 wherein the substantially fully hydrated depolymerized polymer is present in the third treating fluid in an amount in the range of from about 0.2% to about 5% by weight of the water therein.

19. The method of claim 1 wherein the crosslinking agent is selected from the group consisting of boron compounds, compounds that supply zirconium IV ions, compounds that supply titanium IV ions, aluminum compounds and compounds that supply antimony ions.

20. The method of claim 19 wherein the crosslinking agent is a boron compound.

21. The method of claim 19 wherein the crosslinking agent is present in the first treating fluid in an amount in the range of from about 50 ppm to about 5000 ppm.

22. The method of claim 19 wherein the crosslinking agent is present in the third treating fluid in an amount in the range of from about 50 ppm to about 5000 ppm.

23. The method of claim 1 wherein the first treating fluid further comprises a pH adjusting compound, a buffer, a tackifying compound, a surfactant, a clay stabilizer, a fluid loss control agent, a delayed delinker, a delayed breaker, or a mixture thereof.

24. The method of claim 1 wherein the third treating fluid further comprises a pH adjusting compound, a buffer, a tackifying compound, a surfactant, a clay stabilizer, a fluid loss control agent, a delayed delinker, a delayed breaker, or a mixture thereof.

25. The method of claim 1 wherein the substantially fully hydrated depolymerized polymer has a polydispersity ratio of from about 1 to about 12.

26. The method of claim 1 wherein the proppant material is present in the third treating fluid in an amount in the range of from about 1 to about 24 pounds of proppant material per gallon of the third treating fluid.

27. The method of claim 12 wherein the proppant material is present in the second treating fluid in an amount in the range of from about 0.1 to about 1.5 pounds of proppant material per gallon of the second treating fluid.

28. A method of fracturing a subterranean formation comprising the steps of:

introducing a first treating fluid into the subterranean formation at or near a zone of interest to create or enhance at least one fracture therein, the first treating fluid being a gelled and crosslinked treating fluid comprising water, a substantially fully hydrated depolymerized polymer and a crosslinking agent for crosslinking the substantially hydrated depolymerized polymer;

introducing a second treating fluid into the subterranean formation such that a length of at least one fracture therein is extended, the second treating fluid having a lower viscosity than the first treating fluid; and

introducing a third treating fluid into the subterranean formation, the third treating fluid being a gelled and crosslinked treating fluid comprising water, a substantially fully hydrated depolymerized polymer and a crosslinking agent for crosslinking the substantially hydrated depolymerized polymer and further comprising a proppant material,

wherein:

the second treating fluid comprises water; the subterranean formation comprises shale, coal or a mixture thereof; the crosslinking agent is a boron compound; the substantially fully hydrated depolymerized polymer is depolymerized hydroxypropylguar; the substantially fully hydrated depolymerized polymer is present in the first treating fluid in an amount in the range of from about 0.2% to about 5% by weight of the water therein; and the substantially fully hydrated depolymerized polymer is present in the third treating fluid in an amount in the range of from about 0.2% to about 5% by weight of the water therein.

29. The method of claim 28 wherein the subterranean formation comprises a well bore, and wherein the step of introducing a first treating fluid into the formation at or near a zone of interest comprises the step of swabbing the well bore dry before introducing the first treating fluid into the zone of interest.

30. The method of claim 28 wherein the subterranean formation comprises a well bore and tubing, and wherein the step of introducing a first treating fluid into the formation at or near a zone of interest comprises the step of circulating the first treating fluid through the tubing until the first treating fluid reaches a depth at or near the zone of interest.

31. The method of claim 30 wherein the well bore comprises a well fluid, and wherein the step of circulating the first treating fluid through the tubing until the first treating fluid reaches a depth at or near the zone of interest substantially displaces a portion of the well fluid out of the well bore.

32. The method of claim 28 wherein the subterranean formation comprises a set of perforations, and wherein the step of introducing a first treating fluid into the formation at or near a zone of interest comprises placing the first treating fluid at about or near the perforations in the subterranean formation.

33. The method of claim 28 wherein the first treating fluid comprises a proppant material.

34. The method of claim 28 wherein the second treating fluid further comprises a proppant material, a friction reducer, nitrogen, or a mixture thereof.